

FILE 'REGISTRY' ENTERED AT 14:43:44 ON 17 OCT 2007  
L1 STRUCTURE UPLOADED  
L2 9894 S L1  
L3 2 S L1  
L4 20 S L1 SSS FULL

FILE 'CAPLUS' ENTERED AT 14:44:44 ON 17 OCT 2007  
L5 35 S L4

FILE 'STNGUIDE' ENTERED AT 14:44:52 ON 17 OCT 2007

FILE 'HCAPLUS' ENTERED AT 14:47:13 ON 17 OCT 2007  
L6 51792 S FLUORINAT?  
L7 909995 S (SACCHARIDE OR MONOSACCHARIDE OR NUCLEOSIDE OR RIBOS? OR GLUC  
L8 25 S L5 AND L6  
L9 2 S L5 AND L6 AND L7

FILE 'STNGUIDE' ENTERED AT 14:47:19 ON 17 OCT 2007

FILE 'HCAPLUS' ENTERED AT 14:47:41 ON 17 OCT 2007

FILE 'STNGUIDE' ENTERED AT 14:47:41 ON 17 OCT 2007

FILE 'HCAPLUS' ENTERED AT 14:49:18 ON 17 OCT 2007  
L10 12 S L8 AND (AY<2003 OR PY<2003 OR PRY<2003)

=> file registry  
COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
0.21	0.21

FULL ESTIMATED COST

FILE 'REGISTRY' ENTERED AT 14:43:44 ON 17 OCT 2007  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2007 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file  
provided by InfoChem.

STRUCTURE FILE UPDATES: 16 OCT 2007 HIGHEST RN 950817-67-1  
DICTIONARY FILE UPDATES: 16 OCT 2007 HIGHEST RN 950817-67-1

New CAS Information Use Policies, enter HELP USAGETERMS for details.

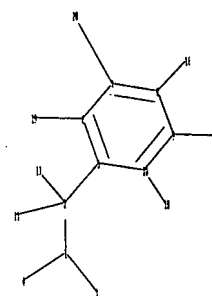
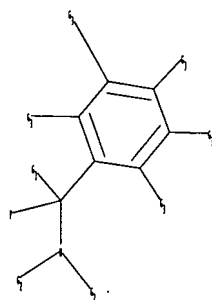
TSCA INFORMATION NOW CURRENT THROUGH June 29, 2007

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and  
predicted properties as well as tags indicating availability of  
experimental property data in the original document. For information  
on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

=>  
Uploading C:\Program Files\Stnexp\Queries\10537437afterfinal.str



```

chain nodes :
1  2  3  4  11  13  16  17  18  19  20
ring nodes :
5  6  7  8  9  10
chain bonds :
1-2  1-3  1-4  2-5  2-11  2-13  6-19  7-20  8-16  9-17  10-18
ring bonds :
5-6  5-10  6-7  7-8  8-9  9-10
exact/norm bonds :
1-2  1-3  1-4  2-13  6-19  7-20  8-16  9-17  10-18
exact bonds :
2-5  2-11
normalized bonds :
5-6  5-10  6-7  7-8  8-9  9-10

```

G1:H,Cl,Br,F,I

G2:CH3,CH2,n-Pr,i-Pr,n-Bu,i-Bu,s-Bu,t-Bu,Ph,H

G3:H,CH3,Et,Cl,Br,F,I,MeO,NH2,NH3,NO2

Match level :

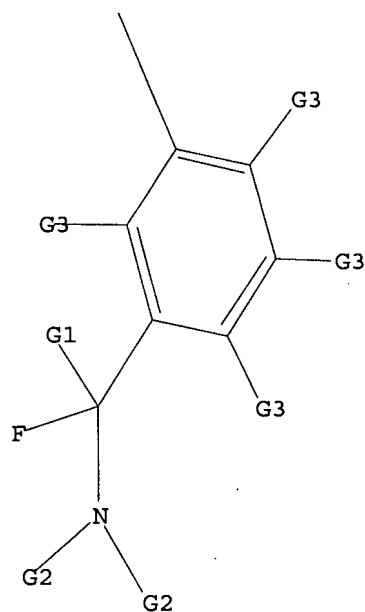
1:CLASS 2:CLASS 3:CLASS 4:CLASS 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom  
11:CLASS 13:CLASS 16:CLASS 17:CLASS 18:CLASS 19:CLASS 20:CLASS

L1 STRUCTURE UPLOADED

=> d 'l1

L1 HAS NO ANSWERS

L1 STR



G1 H,Cl,Br,F,I

G2 Me,CH2,n-Pr,i-Pr,n-Bu,i-Bu,s-Bu,t-Bu,Ph,H

G3 H,Me,Et,Cl,Br,F,I,MeO,NH2,NH3,NO2

Structure attributes must be viewed using STN Express query preparation.

=> s l1`

L2 9894 L1`  
( 'L1' )

=> s l1

SAMPLE SEARCH INITIATED 14:44:10 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 379 TO ITERATE

100.0% PROCESSED 379 ITERATIONS

2 ANSWERS

SEARCH TIME: 00.00.01

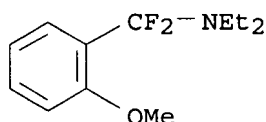
FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*

PROJECTED ITERATIONS: 6412 TO 8748  
PROJECTED ANSWERS: 2 TO 124

L3 2 SEA SSS 'SAM L1

=> d l3 scan

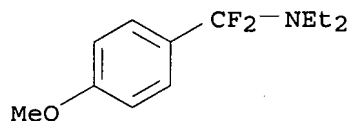
L3 2 ANSWERS REGISTRY COPYRIGHT 2007 ACS on STN  
IN Benzenemethanamine, N,N-diethyl- $\alpha,\alpha$ -difluoro-2-methoxy-  
MF C12 H17 F2 N O



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L3 2 ANSWERS REGISTRY COPYRIGHT 2007 ACS on STN  
IN Benzenemethanamine, N,N-diethyl- $\alpha,\alpha$ -difluoro-4-methoxy-  
MF C12 H17 F2 N O



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

ALL ANSWERS HAVE BEEN SCANNED

=> s l1 sss full  
FULL SEARCH INITIATED 14:44:39 FILE 'REGISTRY'  
FULL SCREEN SEARCH COMPLETED - 7929 TO ITERATE

100.0% PROCESSED 7929 ITERATIONS  
SEARCH TIME: 00.00.01

20 ANSWERS

L4 20 SEA SSS FUL L1

=> file caplus  
COST IN U.S. DOLLARS  
FULL ESTIMATED COST

SINCE FILE	TOTAL
ENTRY	SESSION
177.50	177.71

FILE 'CAPLUS' ENTERED AT 14:44:44 ON 17 OCT 2007  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2007 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 17 Oct 2007 VOL 147 ISS 17  
FILE LAST UPDATED: 16 Oct 2007 (20071016/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply. They are available for your review at:

<http://www.cas.org/infopolicy.html>

=> s l4

L5 35 L4

=> file stnguide

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.47

178.18

FILE 'STNGUIDE' ENTERED AT 14:44:52 ON 17 OCT 2007  
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT  
COPYRIGHT (C) 2007 AMERICAN CHEMICAL SOCIETY (ACS)

FILE CONTAINS CURRENT INFORMATION.

LAST RELOADED: Oct 12, 2007 (20071012/UP).

=> file hcaplus

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.24

178.42

FILE 'HCAPLUS' ENTERED AT 14:47:13 ON 17 OCT 2007  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2007 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 17 Oct 2007 VOL 147 ISS 17  
FILE LAST UPDATED: 16 Oct 2007 (20071016/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s fluorinat?

L6 51792 FLUORINAT?

=> s (saccharide or monosaccharide or nucleoside or ribos? or glucos? or fructos?  
or arabons? or fucos? or (N-acetylglucosamin?) or (N-acetylgalactosamin?) or sugar)

10271 SACCHARIDE  
11905 MONOSACCHARIDE  
48930 NUCLEOSIDE  
120294 RIBOS?  
514419 GLUCOS?  
70340 FRUCTOS?  
0 ARABONS?  
19142 FUCOS?  
3094512 N  
18895 ACETYLGLUCOSAMIN?  
16088 N-ACETYLGLUCOSAMIN?  
(N(W)ACETYLGLUCOSAMIN?)  
3094512 N  
6208 ACETYL GALACTOSAMIN?  
5570 N-ACETYL GALACTOSAMIN?  
(N(W)ACETYL GALACTOSAMIN?)  
268138 SUGAR

L7 909995 (SACCHARIDE OR MONOSACCHARIDE OR NUCLEOSIDE OR RIBOS? OR GLUCOS?  
OR FRUCTOS? OR ARABONS? OR FUCOS? OR (N-ACETYLGLUCOSAMIN?) OR  
(N-ACETYL GALACTOSAMIN?) OR SUGAR)

=> s 15 and 16

35 L4  
L8 25 L5 AND L6

=> s 15 and 16 and 17

35 L4  
L9 2 L5 AND L6 AND L7

=> file stnguide

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	2.60	181.02

FILE 'STNGUIDE' ENTERED AT 14:47:19 ON 17 OCT 2007  
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT  
COPYRIGHT (C) 2007 AMERICAN CHEMICAL SOCIETY (ACS)

FILE CONTAINS CURRENT INFORMATION.  
LAST RELOADED: Oct 12, 2007 (20071012/UP).

=> d 19 1-2 ti abs bib  
YOU HAVE REQUESTED DATA FROM FILE 'HCAPLUS' - CONTINUE? (Y)/N:y

L9 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN  
TI Deoxyfluorination of alcohols using N,N-diethyl- $\alpha,\alpha$ -difluoro-  
(m-methylbenzyl)amine  
AB Deoxyfluorination of alcs. was carried out using N,N-diethyl-  
 $\alpha,\alpha$ -difluoro-(m-methylbenzyl)amine (DFMBA). Primary alcs.  
were effectively converted to fluorides under microwave irradiation or  
conventional heating. Deoxyfluorination of an anomeric hydroxy group in  
sugars by DFMBA proceeded at below room temperature and glycosyl fluorides  
could be obtained in good yields. The deoxyfluorination reaction

chemoselectively proceeded and various protecting groups on the sugar can survive under the reaction conditions.

AN 2004:581849 HCAPLUS <<LOGINID::20071017>>  
DN 141:260951  
TI Deoxyfluorination of alcohols using N,N-diethyl- $\alpha,\alpha$ -difluoro-  
(m-methylbenzyl)amine  
AU Kobayashi, Shingo; Yoneda, Atushi; Fukuhara, Tsuyoshi; Hara, Shoji  
CS Division of Molecular Chemistry, Graduate School of Engineering, Hokkaido  
University, Sapporo, 060-8628, Japan  
SO Tetrahedron (2004), 60(32), 6923-6930  
CODEN: TETRAB; ISSN: 0040-4020  
PB Elsevier Science B.V.  
DT Journal  
LA English  
OS CASREACT 141:260951  
RE.CNT 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN  
TI Method of fluorination using N,N-diethyl- $\alpha,\alpha$ -  
difluorobenzylamines  
AB Disclosed is a method in which a glucide, examples of which include a  
monosaccharide, an oligosaccharide, a polysaccharide, a composite  
saccharide comprising any of these saccharides and a protein or  
lipid bonded thereto, a polyalc., an aldehyde, ketone, or acid of a  
polyalc., a derivative or condensate of any of these, is reacted with a  
fluorinating agent represented by the general formula of  
RCF<sub>2</sub>-Y(R<sub>1</sub>)R<sub>2</sub> [y = N, P; R-R<sub>2</sub> are same or different group selected from H  
and each (un)substituted alkyl and aryl; or  $\geq 2$  of R-R<sub>2</sub> groups are  
bonded to each other to form a ring] either thermally or by irradiation with  
microwave or an electromagnetic wave with a wavelength around the  
microwave region. By the method, fluorination reaction can be  
safely conducted position-selectively even in a temperature range of 150 to  
200°, in which fluorination has conventionally been  
difficult. The method in which the reactants are irradiated with  
microwave or an electromagnetic wave with a wavelength around the  
microwave region is applicable to substrates other than glucides. When a  
complex compound comprising HF and a base, for example, is reacted with a  
substrate by irradiation with microwave, fluorination in a specific  
position which has been difficult in conventional techniques proceeds  
highly selectively in a short time efficiently and safely. Thus, 10 mmol  
Me 2,3-O-isopropylidene- $\beta$ -D-ribofuranoside, 12 mmol  
N,N-diethyl- $\alpha,\alpha$ -difluoro-3-methylbenzylamine, and 20 mL  
heptane were added to a glass vessel reaction vessel coated with  
fluorinated resin, heated with 100° with stirring, and  
allowed to react for 50 min to give 55% Me 2,3-O-isopropylidene-5-deoxy-5-  
fluoro- $\beta$ -D-ribofuranoside.

AN 2004:493719 HCAPLUS <<LOGINID::20071017>>  
DN 141:38808  
TI Method of fluorination using N,N-diethyl- $\alpha,\alpha$ -  
difluorobenzylamines  
IN Hara, Shoji; Fukuhara, Tsuyoshi  
PA Mitsubishi Gas Chemical Company, Inc., Japan  
SO PCT Int. Appl., 50 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	WO 2004050676	A1	20040617	WO 2003-JP15336	20031201
	W: CN, US				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,				
	IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				



JP 2004182664	A	20040702	JP 2002-352968	20021204
JP 2004189655	A	20040708	JP 2002-358249	20021210
EP 1568703	A1	20050831	EP 2003-775984	20031201
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,				
IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK				
CN 1720256	A	20060111	CN 2003-80104679	20031201
CN 1974588	A	20070606	CN 2006-10164022	20031201
US 2006014972	A1	20060119	US 2005-537437	20050603
PRAI JP 2002-352968	A	20021204		
JP 2002-358249	A	20021210		
CN 2003-80104679	A3	20031201		
WO 2003-JP15336	W	20031201		
OS CASREACT 141:38808; MARPAT 141:38808				
RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD				
ALL CITATIONS AVAILABLE IN THE RE FORMAT				

=> file hcaplus

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	0.18	189.52
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	0.00	-1.56

FILE 'HCAPLUS' ENTERED AT 14:49:18 ON 17 OCT 2007  
 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
 PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
 COPYRIGHT (C) 2007 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 17 Oct 2007 VOL 147 ISS 17  
 FILE LAST UPDATED: 16 Oct 2007 (20071016/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s l8 and (AY<2003 or PY<2003 or PRY<2003)

4465265 AY<2003  
 22908103 PY<2003  
 3944043 PRY<2003

L10 12 L8 AND (AY<2003 OR PY<2003 OR PRY<2003)

=> file stnguide

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	2.60	192.12
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL

CA SUBSCRIBER PRICE

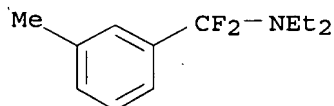
ENTRY      SESSION  
0.00      -1.56

FILE 'STNGUIDE' ENTERED AT 14:49:22 ON 17 OCT 2007  
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT  
COPYRIGHT (C) 2007 AMERICAN CHEMICAL SOCIETY (ACS)

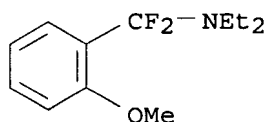
FILE CONTAINS CURRENT INFORMATION.  
LAST RELOADED: Oct 12, 2007 (20071012/UP).

=> d l10 1-12 ti abs bib hitstr  
YOU HAVE REQUESTED DATA FROM FILE 'HCAPLUS' - CONTINUE? (Y)/N:y

L10 ANSWER 1 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN  
TI Preparation of fluorinated alicyclic compounds using  
difluoroamines as thermally stable safe fluorination agents  
AB In title process, R0CF2NR1R2 [R0-R2 = H, (un)substituted alkyl, aryl;  
≥2 of them may be linked to form ring] are used. Thus, Me  
3-hydroxyadamantane-1-carboxylate was fluorinated with  
3-MeC6H4CF2NEt2 at room temperature for 14 h to give 98% Me  
3-fluoroadamantane-1-  
carboxylate.  
AN 2004:529739 HCAPLUS <<LOGINID::20071017>>  
DN 141:88875  
TI Preparation of fluorinated alicyclic compounds using  
difluoroamines as thermally stable safe fluorination agents  
IN Kawai, Ken; Fushimi, Norio; Hidaka, Toshio  
PA Mitsubishi Gas Chemical Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 13 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1  
PATENT NO.                      KIND      DATE                      APPLICATION NO.                      DATE  
-----  
PI JP 2004182671                      A      20040702                      JP 2002-353469                      20021205 <--  
PRAI JP 2002-353469                      20021205 <--  
OS MARPAT 141:88875  
IT 500131-50-0P, N,N-Diethyl-α,α-difluoro-(3-  
methyl)benzylamine 704916-04-1P, N,N-Diethyl-α,α-  
difluoro-(2-methoxy)benzylamine  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(fluorination of alicyclic compds. with thermally stable safe  
difluoroamines)  
RN 500131-50-0 HCAPLUS  
CN Benzenemethanamine, N,N-diethyl-α,α-difluoro-3-methyl- (CA  
INDEX NAME)



RN 704916-04-1 HCAPLUS  
CN Benzenemethanamine, N,N-diethyl-α,α-difluoro-2-methoxy- (CA  
INDEX NAME)



L10 ANSWER 2 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN  
 TI Preparation of thermally stable fluorination agents and  
 fluorination of functional group-containing compounds with them  
 AB Substrates are fluorinated with R<sub>0</sub>CF<sub>2</sub>NR<sub>1</sub>R<sub>2</sub> [R<sub>0</sub>-R<sub>2</sub> = H,  
 (un)substituted alkyl, aryl; ≥2 of them may be linked to form  
 ring]. Thus, fluorination of N,N-diethyl-α-chloro-(2-  
 methoxyphenyl)amidium chloride with KF at 80° for 20 h gave 55%  
 2-MeOC<sub>6</sub>H<sub>4</sub>CF<sub>2</sub>NEt<sub>2</sub>, with which 1-adamantanol was fluorinated at  
 60° for 14 h to afford 86% 1-fluoroadamantane.

AN 2004:529733 HCAPLUS <<LOGINID::20071017>>

DN 141:53982

TI Preparation of thermally stable fluorination agents and  
 fluorination of functional group-containing compounds with them

IN Yamada, Kazuhiro; Hidaka, Toshio

PA Mitsubishi Gas Chemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

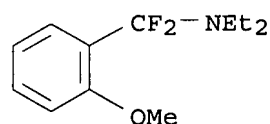
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004182665	A	20040702	JP 2002-353010	20021204 <--
PRAI	JP 2002-353010		20021204 <--		
OS	MARPAT 141:53982				
IT	704916-04-1P				
	RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (fluorination of functional group-containing compds. with thermally stable difluoroamines)				
RN	704916-04-1 HCAPLUS				
CN	Benzenemethanamine, N,N-diethyl-α,α-difluoro-2-methoxy- (CA INDEX NAME)				



L10 ANSWER 3 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN

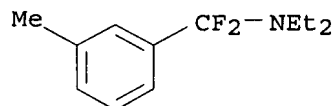
TI Method of fluorination using N,N-diethyl-α,α-  
 difluorobenzylamines

AB Disclosed is a method in which a glucide, examples of which include a  
 monosaccharide, an oligosaccharide, a polysaccharide, a composite  
 saccharide comprising any of these saccharides and a protein or lipid  
 bonded thereto, a polyalc., an aldehyde, ketone, or acid of a polyalc., a  
 derivative or condensate of any of these, is reacted with a  
 fluorinating agent represented by the general formula of  
 RCF<sub>2</sub>-Y(R<sub>1</sub>)R<sub>2</sub> [y = N, P; R-R<sub>2</sub> are same or different group selected from H  
 and each (un)substituted alkyl and aryl; or ≥2 of R-R<sub>2</sub> groups are  
 bonded to each other to form a ring] either thermally or by irradiation with  
 microwave or an electromagnetic wave with a wavelength around the

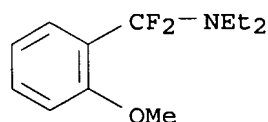
microwave region. By the method, fluorination reaction can be safely conducted position-selectively even in a temperature range of 150 to 200°, in which fluorination has conventionally been difficult. The method in which the reactants are irradiated with microwave or an electromagnetic wave with a wavelength around the microwave region is applicable to substrates other than glucides. When a complex compound comprising HF and a base, for example, is reacted with a substrate by irradiation with microwave, fluorination in a specific position which has been difficult in conventional techniques proceeds highly selectively in a short time efficiently and safely. Thus, 10 mmol Me 2,3-O-isopropylidene-β-D-ribofuranoside, 12 mmol N,N-diethyl-α,α-difluoro-3-methylbenzylamine, and 20 mL heptane were added to a glass vessel reaction vessel coated with fluorinated resin, heated with 100° with stirring, and allowed to react for 50 min to give 55% Me 2,3-O-isopropylidene-5-deoxy-5-fluoro-β-D-ribofuranoside.

AN 2004:493719 HCAPLUS <<LOGINID::20071017>>  
 DN 141:38808  
 TI Method of fluorination using N,N-diethyl-α,α-difluorobenzylamines  
 IN Hara, Shoji; Fukuhara, Tsuyoshi  
 PA Mitsubishi Gas Chemical Company, Inc., Japan  
 SO PCT Int. Appl., 50 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004050676	A1	20040617	WO 2003-JP15336	20031201 <--
	W: CN, US				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
	JP 2004182664	A	20040702	JP 2002-352968	20021204 <--
	JP 2004189655	A	20040708	JP 2002-358249	20021210 <--
	EP 1568703	A1	20050831	EP 2003-775984	20031201 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK				
	CN 1720256	A	20060111	CN 2003-80104679	20031201 <--
	CN 1974588	A	20070606	CN 2006-10164022	20031201 <--
	US 2006014972	A1	20060119	US 2005-537437	20050603 <--
PRAI	JP 2002-352968	A	20021204	<--	
	JP 2002-358249	A	20021210	<--	
	CN 2003-80104679	A3	20031201		
	WO 2003-JP15336	W	20031201		
OS	CASREACT 141:38808; MARPAT 141:38808				
IT	500131-50-0P, N,N-Diethyl-α,α-difluoro-3-methylbenzylamine 704916-04-1P, N,N-Diethyl-α,α-difluoro-2-methoxybenzylamine				
	RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)				
	(fluorination agent; preparation of N,N-diethyl-α,α-difluorobenzylamines as fluorinating agents for monosaccharides, alcs., ketones, epoxides, and aldehydes)				
RN	500131-50-0 HCAPLUS				
CN	Benzenemethanamine, N,N-diethyl-α,α-difluoro-3-methyl- (CA INDEX NAME)				



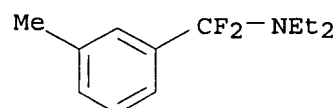
RN 704916-04-1 HCAPLUS  
 CN Benzenemethanamine, N,N-diethyl- $\alpha,\alpha$ -difluoro-2-methoxy- (CA  
 INDEX NAME)



RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 4 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN  
 TI Fluorination under microwave irradiation  
 AB Substrates are fluorinated by fluoro compds. under  
 (near-)microwave irradiation 1-Dodecanol was fluorinated by  
 N,N-diethyl- $\alpha,\alpha$ -difluoro-3-methylbenzylamine under microwave  
 irradiation at room temperature for 10 min to give 93% 1-fluorododecane.  
 AN 2004:330166 HCAPLUS <<LOGINID::20071017>>  
 DN 140:338752  
 TI Fluorination under microwave irradiation  
 IN Hara, Masaharu; Fukuhara, Katashi  
 PA Mitsubishi Gas Chemical Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 9 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004123605	A	20040422	JP 2002-290198	20021002 <--
PRAI	JP 2002-290198		20021002	<--	
OS	CASREACT 140:338752; MARPAT 140:338752				
IT	500131-50-0				
	RL: RCT (Reactant); RACT (Reactant or reagent) (fluorination of organic compds. by fluoro amines under microwave irradiation)				
RN	500131-50-0 HCAPLUS				
CN	Benzenemethanamine, N,N-diethyl- $\alpha,\alpha$ -difluoro-3-methyl- (CA INDEX NAME)				

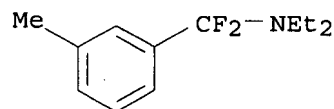


L10 ANSWER 5 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN  
 TI Preparation of heat-stable fluorine compounds, fluorination  
 agents thereof, and surface treatment agents, cleaning solvents, and  
 coatings containing them  
 AB R0CF2XR1R2 [X = N, P; R0, R1, R2 = H, (un)substituted alkyl, aryl; R0, R1,  
 R2 may be linked to form ring] are prepared Also claimed are R0CY:X+R1R2 Y-  
 (X, R0-R2 = same as above; Y = Cl, Br, I) as the intermediates of the F  
 compds. Thus, 3-MeC6H4CCl:N+Et2 Cl- was refluxed with KF in MeCN for 18 h  
 to give .apprx.60% 3-MeC6H4CF2NEt2, which was stable when heated at  
 200° for 1 h in a sealed tube. Fluorination of PhCH2OH

with 3-MeC6H4CF2NEt2 gave 100% PhCH2F.

AN 2003:165059 HCAPLUS <<LOGINID::20071017>>  
 DN 138:204826  
 TI Preparation of heat-stable fluorine compounds, fluorination  
 agents thereof, and surface treatment agents, cleaning solvents, and  
 coatings containing them  
 IN Hidaka, Toshio; Fushimi, Norio; Yoshimura, Takashi; Kawai, Takeshi  
 PA Mitsubishi Gas Chemical Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003064034	A	20030305	JP 2001-257833	20010828 <--
	WO 2003020685	A1	20030313	WO 2002-JP8477	20020822 <--
	W: US				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR				
	EP 1422216	A1	20040526	EP 2002-760710	20020822 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR, BG, CZ, EE, SK				
	US 2004073065	A1	20040415	US 2003-433412	20030604 <--
	US 7019173	B2	20060328		
	US 2006089513	A1	20060427	US 2005-297408	20051209 <--
PRAI	JP 2001-257833	A	20010828 <--		
	WO 2002-JP8477	W	20020822 <--		
	US 2003-433412	A3	20030604		
OS	CASREACT 138:204826; MARPAT 138:204826				
IT	500131-50-0P				
	RL: RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)				
	(fluorination agent; preparation of heat-stable F compds. via amidium halides for fluorination agents, surface treatment agents, cleaning solvents, and coatings)				
RN	500131-50-0 HCAPLUS				
CN	Benzenemethanamine, N,N-diethyl- $\alpha,\alpha$ -difluoro-3-methyl- (CA INDEX NAME)				



L10 ANSWER 6 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN  
 TI Fluorination of thiocarbonyl compounds with bis(2-  
methoxyethyl)aminosulfur trifluoride (Deoxo-Fluor reagent): a facile  
 synthesis of gem-difluorides  
 AB A variety of thiocarbonyl derivs. (thioketone, thioester, thioamide,  
 dithioester, and dithiocarbamate) were converted to the corresponding  
 gem-difluorides in excellent yields on reaction with the  
 fluorinating agent, bis(2-methoxyethyl)aminosulfur trifluoride  
 (I), in the presence of SbCl3. Thus, reacting PhC(S)Ph with I gave  
 PhCF2Ph in 89% yield.  
 AN 2000:463617 HCAPLUS <<LOGINID::20071017>>  
 DN 133:192747  
 TI Fluorination of thiocarbonyl compounds with bis(2-  
methoxyethyl)aminosulfur trifluoride (Deoxo-Fluor reagent): a facile

synthesis of gem-difluorides  
 AU Lal, Gauri S.; Lobach, Elyse; Evans, Ann  
 CS Air Products and Chemicals Inc., Allentown, PA, 18195-1501, USA  
 SO Journal of Organic Chemistry (2000), 65(16), 4830-4832  
 CODEN: JOCEAH; ISSN: 0022-3263  
 PB American Chemical Society  
 DT Journal  
 LA English  
 OS CASREACT 133:192747  
 IT 702-99-8P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of gem-difluorides by fluorination of thiocarbonyl  
 compds. with Deoxo-Fluor reagent)  
 RN 702-99-8 HCAPLUS  
 CN Benzenemethanamine,  $\alpha,\alpha$ -difluoro-N,N-dimethyl- (CA INDEX  
 NAME)

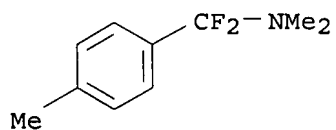
Ph-CF<sub>2</sub>-NMe<sub>2</sub>

RE.CNT 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

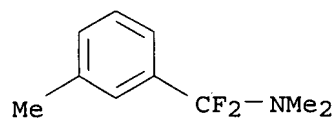
L10 ANSWER 7 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN  
 TI Reactions of N,N-dialkylbenzamides with sulfur tetrafluoride. Formation  
 of dialkyl- $\alpha,\alpha$ -difluorobenzylamines  
 AB The KF-catalyzed reaction of amides R<sub>2</sub>NCOC<sub>6</sub>H<sub>4</sub>R<sub>1</sub> (I; R = Me, Et, Pr,  
 CH<sub>2</sub>CH<sub>2</sub>CF<sub>3</sub>; R<sub>1</sub> = H, Me, OMe, Br, CF<sub>3</sub>, NO<sub>2</sub>) with SF<sub>4</sub> gave amines  
 R<sub>2</sub>NCF<sub>2</sub>C<sub>6</sub>H<sub>4</sub>R<sub>1</sub>. Substituent effects of the R<sub>1</sub> in I (R = Me) is discussed.  
 AN 1984:209316 HCAPLUS <<LOGINID::20071017>>  
 DN 100:209316  
 TI Reactions of N,N-dialkylbenzamides with sulfur tetrafluoride. Formation  
 of dialkyl- $\alpha,\alpha$ -difluorobenzylamines  
 AU Dmowski, Wojciech; Kaminski, Maciej  
 CS Inst. Org. Chem., Pol. Acad. Sci., Warsaw, 01224, Pol.  
 SO Polish Journal of Chemistry (1982), 56(10-12), 1369-78  
 CODEN: PJCHDQ; ISSN: 0137-5083  
 DT Journal  
 LA English  
 OS CASREACT 100:209316  
 IT 702-99-8P 90238-11-2P 90238-12-3P  
 90238-13-4P 90238-14-5P 90238-15-6P  
 90238-18-9P 90238-20-3P 90238-21-4P  
 90238-22-5P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 702-99-8 HCAPLUS  
 CN Benzenemethanamine,  $\alpha,\alpha$ -difluoro-N,N-dimethyl- (CA INDEX  
 NAME)

Ph-CF<sub>2</sub>-NMe<sub>2</sub>

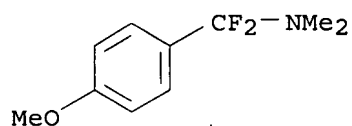
RN 90238-11-2 HCAPLUS  
 CN Benzenemethanamine,  $\alpha,\alpha$ -difluoro-N,N,4-trimethyl- (9CI) (CA  
 INDEX NAME)



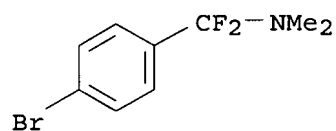
RN 90238-12-3 HCAPLUS  
 CN Benzenemethanamine,  $\alpha,\alpha$ -difluoro-N,N,3-trimethyl- (9CI) (CA INDEX NAME)



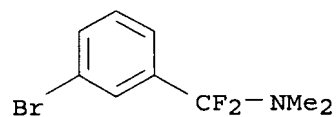
RN 90238-13-4 HCAPLUS  
 CN Benzenemethanamine,  $\alpha,\alpha$ -difluoro-4-methoxy-N,N-dimethyl- (9CI) (CA INDEX NAME)



RN 90238-14-5 HCAPLUS  
 CN Benzenemethanamine, 4-bromo- $\alpha,\alpha$ -difluoro-N,N-dimethyl- (9CI) (CA INDEX NAME)

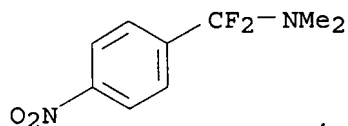


RN 90238-15-6 HCAPLUS  
 CN Benzenemethanamine, 3-bromo- $\alpha,\alpha$ -difluoro-N,N-dimethyl- (9CI) (CA INDEX NAME)

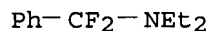


RN 90238-18-9 HCAPLUS  
 CN Benzenemethanamine,  $\alpha,\alpha$ -difluoro-N,N-dimethyl-4-nitro- (9CI) (CA INDEX NAME)

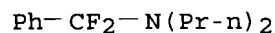




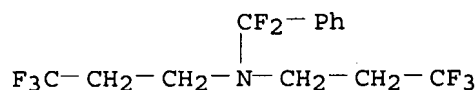
RN 90238-20-3 HCAPLUS  
CN Benzenemethanamine, N,N-diethyl- $\alpha,\alpha$ -difluoro- (9CI) (CA INDEX NAME)



RN 90238-21-4 HCAPLUS  
CN Benzenemethanamine,  $\alpha,\alpha$ -difluoro-N,N-dipropyl- (9CI) (CA INDEX NAME)



RN 90238-22-5 HCAPLUS  
CN Benzenemethanamine,  $\alpha,\alpha$ -difluoro-N,N-bis(3,3,3-trifluoropropyl)- (9CI) (CA INDEX NAME)



L10 ANSWER 8 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN  
TI Dialkyl- $\alpha,\alpha$ -difluorobenzylamines and  
dialkyl(trifluoromethyl)amines - novel fluorinating reagents  
AB The use of PhCF<sub>2</sub>NMe<sub>2</sub> and CF<sub>3</sub>Net<sub>2</sub> as fluorinating reagents to  
replace OH groups in alcs. and carboxylic acids by F has been studied.  
The results, which are very variable, are compared with those reported for  
other fluoroamine reagents.  
AN 1984:34109 HCAPLUS <<LOGINID::20071017>>  
DN 100:34109  
TI Dialkyl- $\alpha,\alpha$ -difluorobenzylamines and  
dialkyl(trifluoromethyl)amines - novel fluorinating reagents  
AU Dmowski, Wojciech; Kaminski, Maciej  
CS Inst. Org. Chem., Pol. Acad. Sci., Warsaw, 00-961, Pol.  
SO Journal of Fluorine Chemistry (1983), 23(3), 219-28  
CODEN: JFLCAR; ISSN: 0022-1139  
DT Journal  
LA English  
OS CASREACT 100:34109  
IT 702-99-8  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(fluorination of alcs. and carboxylic acids by)  
RN 702-99-8 HCAPLUS  
CN Benzenemethanamine,  $\alpha,\alpha$ -difluoro-N,N-dimethyl- (CA INDEX NAME)

Ph-CF<sub>2</sub>-NMe<sub>2</sub>

L10 ANSWER 9 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN  
TI Synthetic methods and reactions. I. Selenium tetrafluoride and its pyridine complex. Convenient fluorinating agents for fluorination of ketones, aldehydes, amides, alcohols, carboxylic acids, and anhydrides  
AB Selenium tetrafluoride is a general purpose, convenient fluorinating agent for a wide variety of compds., such as ketones, aldehydes, amides, alcs., carboxylic acids, and anhydrides. Addition of pyridine, which forms a complex with SeF<sub>4</sub>, in fluorination of alcs. generally prevents isomerization and allows preparation of primary fluorides.  
AN 1974:81959 HCAPLUS <<LOGINID::20071017>>  
DN 80:81959  
TI Synthetic methods and reactions. I. Selenium tetrafluoride and its pyridine complex. Convenient fluorinating agents for fluorination of ketones, aldehydes, amides, alcohols, carboxylic acids, and anhydrides  
AU Olah, George A.; Nojima, Masatomo; Kerekes, Istvan  
CS Dep. Chem., Case West. Reserve Univ., Cleveland, OH, USA  
SO Journal of the American Chemical Society (1974), 96(3), 925-7  
CODEN: JACSAT; ISSN: 0002-7863  
DT Journal  
LA English  
IT 702-99-8P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)  
RN 702-99-8 HCAPLUS  
CN Benzenemethanamine,  $\alpha,\alpha$ -difluoro-N,N-dimethyl- (CA INDEX NAME)

Ph-CF<sub>2</sub>-NMe<sub>2</sub>

L10 ANSWER 10 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN  
TI Chemistry of carbonyl fluoride. I. Fluorination of organic compounds  
AB Carbonyl fluoride reacts with carbonyl compds. such as cyclohexanone, benzaldehyde, and benzophenone to give the gem-difluorides, while HCONMe<sub>2</sub> yields  $\alpha,\alpha$ -difluorotrimethylamine. Metal fluoride-catalyzed addition at the ethylenic bond in perfluoro olefins forms perfluoroacyl fluorides, while the C-N unsatd. compds. CF<sub>3</sub>N: CF<sub>2</sub>, PhNCO, and CF<sub>3</sub>CN give, resp., (CF<sub>3</sub>)<sub>2</sub>NCOF, PhN(COF)<sub>2</sub>, and CF<sub>3</sub>CF<sub>2</sub>NCO. The exptl. technique, infrared and nuclear magnetic resonance spectra are given.  
AN 1963:66175 HCAPLUS <<LOGINID::20071017>>  
DN 58:66175  
OREF 58:11243a-b  
TI Chemistry of carbonyl fluoride. I. Fluorination of organic compounds  
AU Fawcett, F. S.; Tullock, C. W.; Coffman, D. D.  
CS E. I. du Pont de Nemours Co., Wilmington, DE  
SO Journal of the American Chemical Society (1962), 84, 4275-85  
CODEN: JACSAT; ISSN: 0002-7863  
DT Journal  
LA Unavailable  
OS CASREACT 58:66175  
IT 702-99-8P, Benzylamine,  $\alpha,\alpha$ -difluoro-N,N-dimethyl-

RL: PREP (Preparation)  
(preparation of)  
RN 702-99-8 HCAPLUS  
CN Benzenemethanamine,  $\alpha,\alpha$ -difluoro-N,N-dimethyl- (CA INDEX  
NAME)

Ph-CF<sub>2</sub>-NMe<sub>2</sub>

L10 ANSWER 11 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN  
TI Fluorinated organic compounds  
AB The title compds. can be used as chemical intermediates. Cyclohexanone 40, COF<sub>2</sub> 65, and HCONMe<sub>2</sub> 4-5 parts are placed in a reactor containing N, the reactor is closed, the mixture heated at 50° 12 hrs. under autogenous pressure, cooled, the volatile materials are removed, and the remaining liquid is distilled to give 1-fluorocyclohexyl fluoroformate (I), b<sub>27</sub> 59-63°, 52 parts. I 17, hexane 30-5, and BF<sub>3</sub>-etherate 4.8 parts are heated at 45-7° 3 hrs., the mixture is cooled, the upper phase separated, agitated with powdered NaF, the NaF filtered off, the filtrate evaporated, and the residue distilled through a fractionating column to give 1,1-di-fluorocyclohexane, b. 101-7°, n<sub>25D</sub> 1.3900-1.3895, 5.6 parts. Similarly prepared are Ph<sub>2</sub>CF<sub>2</sub>, b<sub>15</sub> 100-1°, n<sub>25D</sub> 1.5360-1.5368; PhCHF<sub>2</sub>, b<sub>15</sub> 35-6°; 4-Me<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>CHF<sub>2</sub>; (FCH<sub>2</sub>)<sub>2</sub>O; PhCF<sub>3</sub> and BzF; F<sub>3</sub>C(CF<sub>2</sub>)<sub>2</sub>COF; F<sub>3</sub>C(CF<sub>2</sub>)<sub>6</sub>COF, b. 108-9°; FOC(CF<sub>2</sub>)<sub>3</sub>COF, b. 47-9°; FOC(CF<sub>2</sub>)<sub>2</sub>COF, b. 30-5°; 2-F<sub>3</sub>CC<sub>6</sub>H<sub>4</sub>COF and phthaloyl fluoride; Me(F<sub>2</sub>CH)NCOF and Me(HCO)NCOF; Me(MeCF<sub>2</sub>)NCOF, b. 97-100° and MeAcNCOF, b. 136-8°; F<sub>2</sub>CHNMe<sub>2</sub>, b. 47-51.5°; PhCF<sub>2</sub>NMe<sub>2</sub>, b. 63°; N-fluoroformyl-1,1-difluorohexamethyleneimine, b<sub>0</sub>-5 50°; and Me<sub>2</sub>NCF<sub>2</sub>NMe<sub>2</sub>, b. 101-3°.  
AN 1963:39841 HCAPLUS <<LOGINID::20071017>>  
DN 58:39841  
OREF 58:6752d-f  
TI Fluorinated organic compounds  
PA E. I. du Pont de Nemours & Co.  
SO 11 pp.  
DT Patent  
LA Unavailable  
FAN.CNT 1  

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 909364		19621031	GB 1960-38526	19601109 <--
	US 3213062		19651019	US 1959-852939	19591116 <--
PRAI	US		19591116	<--	
IT	702-99-8P, Benzylamine, $\alpha,\alpha$ -difluoro-N,N-dimethyl- RL: PREP (Preparation) (preparation of)				
RN	702-99-8 HCAPLUS				
CN	Benzenemethanamine, $\alpha,\alpha$ -difluoro-N,N-dimethyl- (CA INDEX NAME)				

Ph-CF<sub>2</sub>-NMe<sub>2</sub>

L10 ANSWER 12 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN  
TI The chemistry of sulfur tetrafluoride. II. The fluorination of organic carbonyl compounds  
GI For diagram(s), see printed CA Issue.

AB cf. CA 54, 12862h. In many types of organic compds., the selective replacement of O atoms by F can be accomplished with SF<sub>4</sub>. The replacement reactions are performed by cooling the liquid or solid organic compound containing

O in a Hastelloy-lined vessel under N to -78°, removing the N in vacuo, charging the vessel with the gaseous reactants (HF, BF<sub>3</sub>, SF<sub>4</sub>, etc.), heating the sealed vessel for the prescribed period, cooling, venting, and working up by the usual processes of distillation, recrystn., and sublimation (starting material, moles, moles SF<sub>4</sub>, reaction temperature, reaction

time in hrs., product, % yield, and b.p. given): Et-CO<sub>2</sub>H, 0.60, 1.82, 150°, 8, EtCF<sub>3</sub> (scrubbed with 40% aqueous KOH), 89, -; C<sub>6</sub>H<sub>13</sub>CO<sub>2</sub>H, 0.20, 0.65, 130°, 6, C<sub>6</sub>H<sub>13</sub>CF<sub>3</sub>, 80, 101° (n<sub>25</sub>D 1.3449); C<sub>11</sub>H<sub>23</sub>CO<sub>2</sub>H, 0.33, 2.00, 130°, 6, C<sub>11</sub>H<sub>23</sub>CF<sub>3</sub>, 88, 92°/12 mm. (n<sub>25</sub>D 1.3896); C<sub>17</sub>H<sub>35</sub>CO<sub>2</sub>H, 0.35, 2.13, 130°, 6, C<sub>17</sub>H<sub>35</sub>CF<sub>3</sub>, 93, 107°/3 mm. (m 28-30°, n<sub>25</sub>D 1.4148); Me<sub>3</sub>CCH<sub>2</sub>CHMeCH<sub>2</sub>CO<sub>2</sub>H, 0.19, 0.57, 120°, 6, Me<sub>3</sub>CCH<sub>2</sub>CHMeCH<sub>2</sub>CF<sub>3</sub>, 64, 121-2° (n<sub>25</sub>D 1.3657); 4-cyclohexylbutyric acid, 0.20, 0.60, 120°, 10, 1,1,1-trifluoro-4-cyclohexylbutane, 80, 172-3° (n<sub>25</sub>D 1.3987); CH<sub>2</sub>(CO<sub>2</sub>H)<sub>2</sub>, 0.30, 0.69, 40°, 16, CH<sub>2</sub>(COF)<sub>2</sub>, 70, 92-4°; CH<sub>2</sub>(CO<sub>2</sub>H)<sub>2</sub>, 0.40, 2.40, 150°, 8, CH<sub>2</sub>(CF<sub>3</sub>)<sub>2</sub> (scrubbed with 40% aqueous KOH), 57, -; (CH<sub>2</sub>CO<sub>2</sub>H)<sub>2</sub>, 0.40, 2.40, 150°, 8, (CH<sub>2</sub>CF<sub>3</sub>)<sub>2</sub> (scrubbed with 40% aqueous KOH), 41, -; (CH<sub>2</sub>CH<sub>2</sub>CO<sub>2</sub>H)<sub>2</sub>, 0.67, 2.23, 130°, 7, CF<sub>3</sub>(CH<sub>2</sub>)<sub>4</sub>CF<sub>3</sub>, 19, 99-101° (n<sub>25</sub>D 1.3519) [and 39% CF<sub>3</sub>(CH<sub>2</sub>)<sub>4</sub>CO<sub>2</sub>H, m. 36-8°]; HO<sub>2</sub>C(CH<sub>2</sub>)<sub>8</sub>CO<sub>2</sub>H, 0.15, 0.46, 120°, 6, CF<sub>3</sub>(CH<sub>2</sub>)<sub>8</sub>CF<sub>3</sub>, 27, 90-6°/20 (n<sub>25</sub>D 1.3519) [and CF<sub>3</sub>(CH<sub>2</sub>)<sub>8</sub>COF, 45%, b<sub>20</sub> 115-18°, and FOC(CH<sub>2</sub>)<sub>8</sub>COF, 21%, b<sub>20</sub> 144-6°]; HO<sub>2</sub>CCH<sub>2</sub>CH(CO<sub>2</sub>H)CH<sub>2</sub>CO<sub>2</sub>H, 0.07, 0.63, 130°, 10, O.CF<sub>2</sub>.CH<sub>2</sub>.C-(CF<sub>3</sub>).CH<sub>2</sub>.CF<sub>2</sub>, 20, 104-6°; BrCH<sub>2</sub>CHBrCH<sub>2</sub>CO<sub>2</sub>H, 0.53, 1.85, 140°, 8, BrCH<sub>2</sub>CHBrCH<sub>2</sub>CF<sub>3</sub>, 54, 69-75°/58 mm.; F<sub>2</sub>CHCF<sub>2</sub>CO<sub>2</sub>H, 0.15, 0.48 (and 0.03 mole BF<sub>3</sub> as catalyst), 250°, 8, F<sub>2</sub>CHCF<sub>2</sub>CF<sub>3</sub> (scrubbed with 40% aqueous KOH), 56, - (a run at 180° without catalyst gave only F<sub>2</sub>CHCF<sub>2</sub>COF); cyclobutane-1,1-dicarboxylic acid, 0.28, 2.32, 150°, 6, (CF<sub>3</sub>)<sub>2</sub>C.CH<sub>2</sub>.CH<sub>2</sub>.CH<sub>2</sub>, 43, 68-9°; CF<sub>2</sub>.CF<sub>2</sub>.CF<sub>2</sub>.CH<sub>2</sub>CH<sub>2</sub>CO<sub>2</sub>H, 0.08, 0.30, 160°, 16, CF<sub>2</sub>.CF<sub>2</sub>.CF<sub>2</sub>.CHCH<sub>2</sub>CF<sub>3</sub>, 51, 67°; CH<sub>2</sub>:CHCO<sub>2</sub>H, 0.75, 2.00, 130°, 8, CH<sub>2</sub>:CHCF<sub>3</sub> (scrubbed with 20 % aqueous KOH), 45, - 26°; CH<sub>2</sub>:CMeCO<sub>2</sub>H, 0.75, 2.00, 130°, 8, CH<sub>2</sub>:C(CF<sub>3</sub>)Me, 54, 6°; trans-(:CHCO<sub>2</sub>H)<sub>2</sub>, 0.55, 2.78, 130°, 9, trans-(:CHCF<sub>3</sub>)<sub>2</sub>, 95 (scrubbed with 20% aqueous KOH), 6°; (:CHCH<sub>2</sub>CO<sub>2</sub>H)<sub>2</sub>, 0.10, 0.55, 130°, 10, (:CHCH<sub>2</sub>CF<sub>3</sub>)<sub>2</sub>, 58, 90-1° (n<sub>25</sub>D 1.3131); CH<sub>2</sub>:C(CO<sub>2</sub>H)CH<sub>2</sub>CO<sub>2</sub>H, 0.62, 2.80, 160°, 10, CH<sub>2</sub>:C(CF<sub>3</sub>)CH<sub>2</sub>CF<sub>3</sub>, 26, 47-9° [and 41% CH<sub>2</sub>:C(COF)CH<sub>2</sub>CF<sub>3</sub>, b. 90-5°]; HO<sub>2</sub>CCH<sub>2</sub>.CH<sub>2</sub>.CMe.CCO<sub>2</sub>H, 0.149, 0.89, 120°, 4, CF<sub>3</sub>CH<sub>2</sub>.CH<sub>2</sub>.CMe.CCF<sub>3</sub>, 31, 95-6° (and 30% CF<sub>3</sub>CH<sub>2</sub>.CH<sub>2</sub>.CMe:-CCOF, b. 160-1°); HC.tplbond.CCO<sub>2</sub>H, 2.00, 2.10, 30-55°, 3, CH.tplbond.CCOF, 28, 22-3°; CH.tplbond.CCO<sub>2</sub>H, 0.27, 0.78, 120°, 3, CH.tplbond.CCF<sub>3</sub> (scrubbed with buffer of pH 8.5 containing 450 g. NaH<sub>2</sub>PO<sub>4</sub>.H<sub>2</sub>O and 220 g. KOH in 4 l. H<sub>2</sub>O), 60, -; (.tplbond.CCO<sub>2</sub>H)<sub>2</sub> (diluted with 60 g. methylcyclohexane), 0.395, 1.67, 70; 6, (.tplbond.CCOF)<sub>2</sub>, 51, 40-5°; (.tplbond.CCO<sub>2</sub>H)<sub>2</sub>, 0.125, 0.75 (and 0.016 mole TiF<sub>4</sub> as catalyst), 170°, 8, (.tplbond.CCF<sub>3</sub>)<sub>2</sub>, 80, -; O(CH<sub>2</sub>CO<sub>2</sub>H)<sub>2</sub>, 0.50, 3.00, 130°, 7, O(CH<sub>2</sub>CF<sub>3</sub>)<sub>2</sub>, 35, 58-9° (and O.CH<sub>2</sub>.CF<sub>2</sub>.O.CF<sub>2</sub>.CH<sub>2</sub>, 14%, b. 91°, n<sub>25</sub>D 1.3262); EtO<sub>2</sub>C(CH<sub>2</sub>)<sub>4</sub>CO<sub>2</sub>H, 0.77, 2.00, 130°, 7, EtO<sub>2</sub>C(CH<sub>2</sub>)<sub>4</sub>CF<sub>3</sub>, 14, 57-9°/11 mm. (n<sub>25</sub>D 1.3725) [and 13% HO<sub>2</sub>C(CH<sub>2</sub>)<sub>4</sub>CF<sub>3</sub>, 110-11.5°/17 mm., 37-8.5°]; HOCH<sub>2</sub>CO<sub>2</sub>H, 0.75, 3.00, 160° 5, FCH<sub>2</sub>CF<sub>3</sub> (scrubbed with 20% aqueous KOH), 48, -26.5° (and 18% FCH<sub>2</sub>COF, b. 51°); HO<sub>2</sub>CCH<sub>2</sub>SO<sub>3</sub>H, 0.2, 0.69, 180°, 6, CF<sub>3</sub>CH<sub>2</sub>SO<sub>2</sub>F, 41, 105-7°; HO<sub>2</sub>C(CH<sub>2</sub>)<sub>10</sub>SO<sub>3</sub>H, 0.083, 0.41, 130°, 8, CF<sub>3</sub>(CH<sub>2</sub>)<sub>10</sub>SO<sub>2</sub>F, 42, 100-10°/0.10 mm.; HO<sub>2</sub>C(CH<sub>2</sub>)<sub>6</sub>CH(CO<sub>2</sub>H)SO<sub>3</sub>H, 0.195, 1.61, 150°, 8, CF<sub>3</sub>(CH<sub>2</sub>)<sub>6</sub>CH(CF<sub>3</sub>)SO<sub>2</sub>F, 33, 62-4°/0.15; BzOH, 0.25, 0.50, 120°, 6, PhCF<sub>3</sub>, 22, 100-1° (n<sub>25</sub>D 1.4133) (and 41% BzF, b. 155-6°); BzCO<sub>2</sub>H, 0.125, 0.51, 100°, 6, PhCF<sub>3</sub>, 13, 45-55°/100 mm. (and 59% BzF, b<sub>100</sub> 92-4°); o-C<sub>6</sub>H<sub>4</sub>(CO<sub>2</sub>H)<sub>2</sub>, 0.10, 0.55, 120°, 6,

$\text{o-C}_6\text{H}_4(\text{CF}_3)_2$ , 43, 140-4° (and  $\text{o-CF}_3\text{C}_6\text{H}_4\text{COF}$ , 23%, b. 175-8°);  
 $\text{p-C}_6\text{H}_4(\text{CO}_2\text{H})_2$ , 0.10, 0.60, 120°, 6,  $\text{p-C}_6\text{H}_4(\text{CF}_3)_2$ , 76,  
 113-15° (n25D 1.3767) (and 3%  $\text{p-CF}_3\text{C}_6\text{H}_4\text{COF}$ , b. 156°);  
 $1,2,4,5\text{-C}_6\text{H}_2(\text{CO}_2\text{H})_4$ , 0.07, 0.83, 150°, 6,  $1,2,4,5\text{-C}_6\text{H}_2(\text{CF}_3)_4$ , 77, -  
 (m. 73-4°);  $\text{p-MeO}_2\text{CC}_6\text{H}_4\text{CO}_2\text{H}$ , 0.44, 1.33, 130°, 7,  
 $\text{p-MeO}_2\text{CC}_6\text{H}_4\text{COF}$ , 63, 120-1°/13 mm. (m. 69-70.5°);  
 $\text{p-O}_2\text{NC}_6\text{-H}_4\text{CO}_2\text{H}$ , 0.67, 2.12, 130°, 7,  $\text{p-O}_2\text{NC}_6\text{H}_4\text{CF}_3$ , 72, - (m.  
 41-3°);  $4,1,3\text{-ClC}_6\text{H}_3(\text{CO}_2\text{H})_2$ , 0.20, 1.20, 150°, 8,  
 $4,1,3\text{-ClC}_6\text{H}_3(\text{CF}_3)_2$ , 62, 147° (n25D 1.4130); piperazine-2,3,5,6-  
 tetracarboxylic acid, 0.035, 0.42, 150°, 6, 2,3,5,6-  
 tetrakis(trifluoromethyl)piperazine, 20, 129°:  $\text{BzF}$ , 0.145, 0.30  
 (and 0.05 mole  $\text{HF}$  as catalyst), 120°, 6,  $\text{PhCF}_3$ , 41, 100°  
 (n24.9D 1.4124);  $\text{BzCl}$ , 0.20, 0.80, 150°, 8,  $\text{BzF}$ , 51, 149°;  
 $\text{BzCl}$ , 0.20, 0.50 (and 0.25 mole  $\text{HF}$ ), 120°, 6,  $\text{m-ClC}_6\text{H}_4\text{CF}_3$ , 25,  
 138-9° (n25D 1.4459);  $\text{Ac}_2\text{O}$ , 0.30, 0.20, 300°, 10,  $\text{MeCF}_3$   
 (scrubbed with 10% aqueous  $\text{NaOH}$ ), 50, -; maleic anhydride, 0.30, 0.60,  
 150°, 13, maleic acid difluoride, 71, 100-5°;  
 dichloromaleic anhydride, 0.20, 0.47, 300°, 10,  $\text{O.CF}_2.\text{CCl}:\text{CCl}.\text{CF}_2$ ,  
 46, 73-4°; phthalic anhydride, 0.20, 0.40, 180°, 18,  
 $\text{o-C}_6\text{H}_4(\text{COF})_2$ , 93, - (m. 40°); phthalic anhydride, 0.40, 1.60,  
 350°, 11,  $\text{o-C}_6\text{H}_4(\text{CF}_3)_2$ , 45, 143°;  $\text{BzONa}$  (in 100 cc.  
 cyclohexane), 0.25, 0.50, 120°, 6,  $\text{BzF}$ , 48, 152-5°;  
 $\text{PhC.tplbond.CCO}_2\text{Na}$  (in 100 cc. cyclohexane), 0.475, 0.52, 45°, 6,  
 $\text{PhC.tplbond.CCOF}$ , 71, 52-3°/2 mm.;  $\text{BzOMe}$ , 0.30, 0.60, 300°,  
 6, 55%  $\text{PhCF}_3$ , 98° (and a trace of  $\text{BzF}$ , b. 151°);  
 $\text{p-C}_6\text{H}_4(\text{CO}_2\text{Me})_2$ , 0.10, 0.60 (and 0.03 mole  $\text{BF}_3$ ), 130°, 8,  
 $\text{p-C}_6\text{H}_4(\text{CF}_3)_2$ , 16, 113-16° [and 26%  $\text{p-CF}_3\text{C}_6\text{H}_4\text{COF}$ , b. 154-8°;  
 4%  $\text{p-C}_6\text{H}_4(\text{COF})_2$ , m. 122-4°, and a high yield of  $\text{MeF}$ ];  $\text{HCO}_2\text{Me}$ , 0.10,  
 32 (and 0.05 mole  $\text{HF}$ ), 200°, 6, -, - (high yields of  $\text{MeF}$  and  $\text{CHF}_3$   
 and a low yield of  $\text{F}_2\text{CHOMe}$ );  $\text{MeO}_2\text{CC}:\text{CH}.\text{CF}_2.\text{CF}_2$ , 0.20, 0.60 (and 0.03 mole  
 $\text{BF}_3$ ), 140°, 16,  $\text{CF}_3\text{C}:\text{CH}.\text{CF}_2.\text{CF}_2$ , 10, 42-3°;  $\text{BzNH}_2$ , 0.20,  
 0.41, 150°, 8,  $\text{PhCF}_3$ , 13, 36-8°/64 mm. (n25D 1.4150);  
 $\text{BzNHMe}$ , 0.25, 0.50 (and 0.05 mole  $\text{BF}_3$ ), 60°, 4,  $\text{BzF}$ , 48,  
 90-4°/107°;  $\text{BzNMe}_2$ , 0.25, 0.50, 130°, 6,  $\text{PhCF}_2\text{NMe}_2$ ,  
 17, 70-1°/15 mm. (and 1.3%  $\text{BzF}$ , b13 50-5°); phthalimide,  
 0.20, 0.69 (and 0.045 mole  $\text{BF}_3$ ), 100°, 10,  $\text{o-CF}_3\text{C}_6\text{H}_4\text{COF}$ , 58,  
 176-8°;  $\text{AcH}$ , 0.60, 0.75, 50°, 14,  $\text{MeCHF}_2$ , 35, above  
 -34°;  $\text{C}_6\text{H}_{13}\text{CHO}$ , 0.25, 0.37, 60°, 8,  $\text{C}_6\text{H}_{13}\text{CHF}_2$ ,  
 43, 118-19° (n25D 1.3688);  $\alpha$ -polyoxymethylene, 2.33, 2.30,  
 150°, 6,  $\text{CH}_2\text{F}_2$ , 59, -51-5° [and  $\text{O}(\text{CH}_2\text{F})_2$ , 21%, b.  
 32-4°];  $\text{H}(\text{CF}_2)_4\text{CHO}$ , 0.25, 0.28, 100°, 10,  $\text{F}_2\text{CH}(\text{CF}_2)_3\text{CHF}_2$ ,  
 55, 68-70°;  $\text{BzH}$ , 0.30, 0.60, 150°, 6,  $\text{PhCHF}_2$ , 81,  
 130-5° (a similar run but with 0.30 mole  $\text{SF}_4$  gave no distillable  
 product);  $\text{p-C}_6\text{H}_4(\text{CHO})_2$ , 0.15, 1.00, 150°, 8,  $\text{p-C}_6\text{H}_4(\text{CHF}_2)_2$ , 88,  
 54°/20 mm;  $\text{Me}_2\text{CO}$ , 0.60, 0.67, 110°, 16,  $\text{Me}_2\text{CF}_2$ , 60, -10 to  
 -5°; cyclohexanone, 0.40, 0.41, 39°, 13,  
 1,1-difluorocyclohexane, 31, 98-9° (n25D 1.3890);  $\text{BzPh}$ , 0.25, 0.50  
 (and 0.05 mole  $\text{HF}$ ), 180°, 6,  $\text{Ph}_2\text{CF}_2$ , 97, 114-15°/7.5 mm.  
 (n25D 1.5351);  $\text{BzCF}_3$ , 0.075, 0.22, 100°, 8,  $\text{PhC}_2\text{F}_5$ , 65,  
 115-16°;  $\text{Bz}_2$ , 0.125, 0.50, 180°, 5,  $(\text{PhCF}_2)_2$ , 34, - (m.  
 122-3°); trioxoindan- $\text{H}_2\text{O}$ , 0.254, 1.55, 120°, 8,  
 $\text{o-C}_6\text{H}_4.\text{CF}_2.\text{CF}_2.\text{CF}_2$ , 25, 34°/4.5 mm. (b70 92-3°);  
 $(\text{EtO}_2\text{CCH}_2)_2\text{CO}$ , 0.25, 0.50, 80°, 6,  $(\text{EtO}_2\text{CCH}_2)_2\text{CF}_2$ , 29,  
 63-5°/2 mm. (n25D 1.4038);  $\text{Ac}(\text{CH}_2)_2\text{CO}_2\text{Et}$ , 0.42, 0.48 (and 0.028  
 mole  $\text{H}_2\text{O}$ ), 95°, 10,  $\text{MeCF}_2(\text{CH}_2)_2\text{CO}_2\text{Et}$ , 16, 70-2°/27 mm. (n25D  
 1.3798);  $\text{BzCH}:\text{CHCO}_2\text{Me}$ , 0.23, 0.48, 160°, 10,  $\text{PhCF}_2\text{CH}:\text{CHCO}_2\text{Me}$ , 25,  
 102-3°/4.5 mm., (n25D 1.4861); p-benzoquinone, 0.20, 0.35 (and 0.35  
 mole  $\text{HF}$ ), 200°, 4,  $1,2,4\text{-C}_6\text{H}_3\text{F}_3$ , 30, 86.5°; chloranil,  
 0.14, 0.42 (and 0.15 mole  $\text{HF}$ ), 270°, 2.5,  $\text{CF}_2.\text{CCl}:\text{CCl}.\text{CF}_2.\text{CCl}:\text{CCl}$ ,  
 75, 183-8° (m. 45.5-6.5°) (and 2%  $\text{CO.CCl}:\text{CCl}.\text{CF}_2.\text{CCl}:\text{CCl}$ , m.  
 104-7°); 2,5-dihydroxy-p-benzoquinone, 0.10, 0.55 (and 0.10 mole  
 $\text{HF}$ ), 60°, 8,  $\text{CF}_2.\text{CF}_2.\text{CH}_2.\text{CF}_2.\text{CF}:\text{CH}$ , 40, 88-8.5°;  
 2-hydroxy-1,4-naphthoquinone, 0.10, 0.50 (and 0.10 mole  $\text{H}_2\text{O}$ ), 140°,  
 1.5, 1,1,2,2,4,4-hexafluoro-1,2,3,4-tetrahydronaphthalene, 36,

91-5°/30 mm.; anthraquinone, 0.059, 0.28, (and 0.05 mole HF), 225°, 8, 9,9,10,10-tetrafluoroanthracene, 78, - (m. 122-2.5°); tropolone (I), 0.02 (and 5 cc. C6H6), 0.065, 60°, 10, 2-fluorotropone, 28, - (m. 74-5°); 3,5,7-tri-Br derivative of I, 0.0033 (and 5 cc. C6H6), 0.02, 60°, 8, 2-fluoro-3,5,7-tribromotropone, 57, - (m. 134-42°). CO2 (0.11 mole) and 0.20 mole SF4 heated 2 hrs. at 500° yielded 80% CF4 and 10% COF2. COCl2 (0.10 mole) and 0.30 mole SF4 in the presence of 0.026 mole TiF4 heated 4 hrs. at 250° gave 90% CF4 and 9% COF2. CO (0.2 mole), 0.50 mole SF4, and 0.5 mole HF heated 7 hrs. at 250° yielded 95% CF4. A mixture of 0.75 mole CO and 0.22 mole SOF2 heated 2 hrs. at 500° gave 70% CO, 13% COS, 6% COF2, and 11% CO2.

AN 1960:74178 HCAPLUS <<LOGINID::20071017>>  
 DN 54:74178  
 OREF 54:14091f-i,14092a-i,14093a-g  
 TI The chemistry of sulfur tetrafluoride. II. The fluorination of organic carbonyl compounds  
 AU Hasek, W. R.; Smith, W. C.; Engelhardt, V. A.  
 CS E. I. du Pont de Nemours & Co., Wilmington, DE  
 SO Journal of the American Chemical Society (1960), 82, 543-51  
 CODEN: JACSAT; ISSN: 0002-7863  
 DT Journal  
 LA Unavailable  
 IT 702-99-8P, Benzylamine,  $\alpha,\alpha$ -difluoro-N,N-dimethyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 702-99-8 HCAPLUS  
 CN Benzenemethanamine,  $\alpha,\alpha$ -difluoro-N,N-dimethyl- (CA INDEX  
 NAME)

Ph-CF<sub>2</sub>-NMe<sub>2</sub>